

The Effects of Problem-Based, Project-Based, and Multicultural Learning on Prosocial Behavior in Elementary School Students

Danang Prastyo^{1✉}, Budi Eko Soetjipto², Syamsul Hadi³, Ari Sapto⁴

Universitas Negeri Malang, Indonesia^(1,2,3,4)

DOI: [10.31004/obsesi.v8i5.6204](https://doi.org/10.31004/obsesi.v8i5.6204)

Abstract

This study aims to determine the influence of Problem-Based Learning, Project Based Learning and Multicultural Based Learning on prosocial behaviour in elementary school students. This study is a type of quasi-experimental research with a model using the Nonequivalent Control Group Posttest Design. The research population consisted of 284 public elementary schools (SD) in Surabaya. In comparison, the research sample consisted of grade V students in three schools, namely SDN Margerejo I, SDN Sumur Welut III Surabaya, and SDN Menanggal 601 Surabaya. The data collection technique uses a questionnaire with 30 questions. The research instrument used the Measure of Prosocial Tendencies by adapting Carlo. Data analysis with statistical analysis of ANOVA test. The results of this study concluded the effect of project-based learning on prosocial behaviour in elementary school students with an ANOVA test score sig. < 0.05. These findings show that the project-based learning model can foster prosocial behavior in elementary school students.

Keywords: *PjBL Model, Pjbl, PBM, Prosocial Behavior; Learning*

Copyright (c) 2022 Nama Penulis^{1,2} dst.

✉ Corresponding author: Danang Prastyo

Email Address: danang.prastyo.192139@students.um.ac.id

Received 21 September 2024, Accepted tanggal 30 October 2024, Published 30 October 2024

Introduction

Critical Prosocial behavior is an important aspect in the development of students' character, especially at the elementary school level, which is a critical phase in the formation of social and moral values (Taylor et al., 2024). Prosocial behavior includes actions such as helping, sharing, cooperating, and showing empathy for others. These actions not only help in creating a harmonious learning environment, but also build a strong foundation for students' social and emotional development (Llorent et al., 2022). In the context of education, prosocial behavior has a crucial role in shaping an inclusive and supportive school culture, where students learn to respect differences and work together towards a common goal (Zulyusri et al., 2023; Hariyadi et al., 2023; Sastradiharja, 2024).

Prosocial behavior contributes significantly to students' academic success and emotional well-being. When students engage in prosocial behavior, they tend to have better relationships with classmates and teachers (Kadafi et al., 2023), which in turn increases learning motivation and participation in school activities. Students who develop prosocial behavior early on are also more likely to grow into empathetic and responsible individuals, who can make positive contributions to society in the future (Rodrigues et al., 2023). Therefore, integrating prosocial behavior education in the primary school curriculum is a strategic step

that not only forms intelligent individuals, but also has character and plays an active role in their communities.

Education has a central role in shaping prosocial behavior in students, especially at the elementary school level. In this phase, education not only focuses on academic achievement, but also on the development of character and social values that will be the basis of students' behavior in the future. Through the right curriculum and learning methods, schools can become environments that support the development of prosocial behaviors, such as cooperating, sharing, and showing empathy (Llorent et al., 2022; Kılıç & Ulu, 2023). By designing activities that encourage positive interaction between students, education plays the role of the main facilitator in instilling prosocial values that will shape student behavior in daily life.

Furthermore, education also acts as a forum for internalizing important social and moral norms in society. Through structured programs, such as Project Based Learning, students can learn not only through theory, but also through real practice that involves cooperation and social responsibility (Prasetyo et al., 2023). Thus, education plays an important role in directing students not only to understand the concept of prosocial behavior, but also to apply it in real contexts (Gråd et al., 2020). Therefore, education serves as an effective tool in shaping the young generation who are not only intellectually intelligent, but also have social awareness and commitment to contribute positively in their communities (White, 2024; Savran Gencer & Doğan, 2020).

Problems related to prosocial behavior in elementary school students often arise due to a lack of emphasis on character development and social values in the curriculum (Kadafi et al., n.d.). Although academic education is the main focus, important aspects such as empathy, cooperation, and a sense of responsibility towards others are sometimes overlooked. This is exacerbated by an environment that does not always support the development of prosocial behaviors, both at home and at school (Masdarini et al., 2020). As a result, many students do not have the opportunity to develop the social skills necessary to interact positively with others. This can lead to a lack of empathy, difficulty in cooperating with peers, and behaviors that tend to be selfish or individualistic (Llorent et al., 2022).

In addition, another problem that often occurs is the lack of role models and learning situations that encourage prosocial behavior (Suwistika et al., 2024). Teachers and school environments that do not actively teach or model prosocial behavior can make students not understand the importance of these actions (Rodrigues et al., 2023). Many schools still focus on traditional, teacher-centered learning approaches, so social interaction and prosocial skill development don't get enough attention. Without a structured and consistent approach to teaching prosocial behaviors, students may not get the opportunity to practice and internalize those values in everyday life (Bardhoshi et al., 2020), which in turn can affect their overall social and emotional development. Therefore, it is necessary to have a learning model that can foster students' prosocial behavior, namely project-based learning (Ali et al., 2024; Ainia et al., 2024).

Project Based Learning (PjBL) is a learning model that emphasizes student involvement in real, relevant projects that require practical application of the knowledge and skills that have been learned. (Özkan, 2023; Mursid et al., 2021). In PBL, students are given the responsibility of completing projects that are often related to real-world problems or challenges that require problem-solving, collaboration, and creativity (Erviana et al., 2021). This learning process involves in-depth exploration, research, and presentation of results, which allows students to develop a deeper and integrated understanding of the subject matter. With a focus on project-based learning, PBL provides opportunities for students to learn in a more meaningful and contextual way, so they can see how what they learn applies in real life (Sviatko & Camed, 2024).

Project-based learning encourages the development of 21st-century skills such as critical thinking, communication, collaboration, and creativity, which are crucial in preparing students for future challenges (Sviatko & Camed, 2024). In a PBL environment, students work in teams to design, develop, and complete projects, which not only strengthens their academic understanding (Popov & Thielmann, 2023), but also helps them develop social and emotional skills. Intensive interaction within the project team also encourages students to learn to appreciate different perspectives, work together effectively, and develop a sense of responsibility for their work. As such, PBL not only prepares students for academic success, but also to become individuals capable of contributing

Research by Thomas et al. (2019) found that students who engaged in PBL showed a significant improvement in their ability to cooperate and share, compared to students who followed traditional learning methods. The study revealed that projects that require collaboration between students encourage them to develop a sense of social responsibility and sensitivity to the needs of their classmates, which are key components of prosocial behavior. positively in an increasingly complex and diverse society.

Research conducted by Johnson and Johnson (2020) shows that PBL has a positive impact on academic aspects and the development of students' social and emotional skills. In their study, students who engaged in team-based projects reported improvements in communication and cooperation skills, which contributed to the formation of prosocial behaviors. The results of this study are consistent with the findings from previous studies that state that a learning environment that supports positive social interaction, such as that facilitated by PBL, can help students internalize prosocial values. Thus, these studies provide empirical evidence that PBL is effective in developing prosocial behavior among school students. Therefore, this study aims to determine the influence of project-based learning on prosocial behavior in elementary school students.

Methodology

This type of research is experimental research. This study uses the Nonequavalent Control Group Posttest Design design. This study involved three experimental groups, each of which was given different treatments according to the learning model being trialled, and one control group that used conventional learning methods. The measurement of prosocial behaviour was conducted using validated observation instruments and questionnaires before and after the intervention to determine the changes that occurred. The research population is SDN Surabaya with a research sample of grade V elementary school students at SDN Margerejo I, SDN Sumur Welut III Surabaya, SDN Dukuh Menanggal 601 Surabaya. The data collection technique used a questionnaire with 30 questions, while the research instrument used the Measure of Prosocial Tendencies by adapting Carlo's. Data analysis was conducted using t-test and ANOVA statistical techniques to compare the effects of the three learning models on students' prosocial behaviour.

Result and Discussion

Based on the research that has been conducted, data on the influence of the project-based learning model on the prosocial behavior of elementary school students can be seen in Tables 1 and 2.

Table 1. Description of Students' Prosocial Behavior Values with PBL, PjBL and PBM Models

Value	N	Mean	Std.Deviasi	Std.Error
PBL	57	90.07	12.30	1.62
PjBL	54	91.24	6.14	0.83
PBM	54	85.01	8.14	1.10
Total	165	88.80	9.62	0.74

Table 2. ANOVA Test

ANOVA					
Value					
	Sum of Squares	df	Mean Square	f	Sig.
Between Group	1185.82	2	592.91	6.86	0.001
Within Groups	13994.57	162			
Total	15180.40	164			

Based on Table 1, the project-based learning model has a significant influence on students' social behavior with a mean value of 91,240, a standard deviation of 6,142 and a standard error of 0.835, The average score of Problem Based Learning was 90.07 and the average score of Multicultural-Based Learning was 85.01. Furthermore, in table 2, the p value < 0.001 means these findings are in line with social learning theory which states that interaction in groups and hands-on experience in solving problems can improve students' ability to better understand and respond to the needs of others(Yang et al., 2021). Thus, PBL is not only an academic learning tool, but also an important strategy in the formation of students' character and social values.

The project-based learning model trains students not only to learn to complete tasks individually, but also to work together to achieve common goals. This collaboration requires effective communication, fair division of tasks, and understanding of other people's perspectives (Mursid et al., 2021). Through this process, students learn to appreciate the roles and contributions of each team member, which ultimately strengthens a sense of community and social responsibility. This learning is very different from traditional learning methods which tend to be more individualistic and provide less opportunities for social interaction of elementary school students (Azamatova et al., 2021; Hanham et al., 2020).

The PjBL model can increase the level of student empathy. Empathy, as an essential component of prosocial behavior, develops when students engage in projects that require them to understand and consider the feelings and needs of others. In the context of PjBL, students are often faced with situations where they have to think about the impact of their decisions on other groups and individuals, both in the context of the project and in everyday life (Khafah et al., 2023). This process helps students develop higher emotional and social awareness, which is the foundation of strong prosocial behavior(Sviatko & Camed, 2024). PBL has proven to be effective in developing prosocial behaviors, its implementation is not without challenges. One of the main challenges is the need for careful planning and effective facilitation by teachers(Trombini, 2020). Teachers need to ensure that the projects provided are not only academically challenging, but also designed to encourage positive social interaction and the development of prosocial skills. Additionally, some students may initially have difficulty adapting to learning models that demand intensive cooperation, especially if they are familiar with traditional learning methods.

Therefore, Project-based learning can improve prosocial behavior, schools can consider integrating this method more broadly in the curriculum. In addition to improving academic achievement(Taylor et al., 2024), PBL can serve as a tool to shape students' character, preparing them to become individuals who are not only intelligent but also have high social awareness. Integrating PBL in daily learning can help create a more inclusive and supportive school environment, where prosocial values are taught and practiced consistently (Arochman et al., 2021).

Application of the Absed learning project model to the development of students' prosocial behavior. Future research may expand the sample and context of research to test whether similar results can be found at higher levels of education or in different social settings (Bardhoshi et al., 2023; Mishra et al., 2023; Pitorini et al., 2024). In addition,

education practitioners are advised to continue to explore and develop project-based learning strategies specifically designed to reinforce prosocial behaviors. With the right approach, project-based learning can be one of the main pillars in character education in elementary schools, helping students not only become good learners, but also caring and responsible individuals in society (Sastradiharja, 2024).

Problem-Based Learning (PBL) encourages students to learn through real-world problem-solving experiences, which promotes collaborative skills and empathy (Lee & Lee, 2022; Castelnovo et al., 2023). In the context of PBL, students tend to improve their social awareness and skills to interact effectively with others, two important components of prosocial behavior (Şimşek et al., n.d.). Project-Based Learning (PjBL), on the other hand, emphasizes learning through complex projects and often involves long-term collaboration between students. PjBL not only facilitates academic learning but also social and emotional development. Students who are involved in PjBL often develop a sense of social responsibility and concern for their community. This is because they learn to assess the social and environmental impact of the projects they work on, which can reinforce their prosocial behaviour. (Laksana et al., 2023; Zainil et al., 2022; Ainia et al., 2024).

Multicultural-Based Learning (MBL) teaches students to appreciate and understand the diversity of cultures, races, religions, and social backgrounds. This approach aims to build cross-cultural understanding and tolerance among students, which is an important foundation of prosocial behavior (Treepob et al., 2023). Through MBL, students are taught to celebrate differences and understand the perspectives of others, which can help in preventing conflict and promoting positive interactions between individuals from different backgrounds (Widyaningtyas et al., 2024).

This study shows that these three learning methods have a significant influence on students' prosocial behavior. By integrating PBL, PjBL, and MBL in the primary school curriculum, educational institutions can not only improve academic skills but also support the development of qualities such as empathy, cooperation, and social care (Çayır & Balcı, 2021; Ijirana et al., 2022; Arisoy & Aybek, 2021). This shows the importance of education that not only focuses on intellectual achievement but also on the formation of students' character to prepare them to become responsible and prosocial citizens of the world.

Conclusion

From the results of this study, it can be concluded that the effect of project-based learning on prosocial behavior in elementary school students with an ANOVA test score sig. < 0.05. These findings show that the project-based learning model can foster prosocial behavior in elementary school students. Students not only improve their academic abilities, but also develop important social skills such as cooperation, empathy, and social responsibility. Intensive interaction and collaboration in PBL-based projects help students to better understand and appreciate the perspectives of others, as well as internalize essential prosocial values. Therefore, PBL is not only effective as an academic learning method, but also as an important strategy in shaping students' character, making it a very relevant and beneficial approach in the context of basic education. Future research can further explore other variables that influence the success of these three learning models, such as parental involvement or the influence of the social environment outside school. In addition, longitudinal studies can be conducted to see the long-term impact of project-based and multicultural learning on students' prosocial development. The practical application in education is to integrate these three models into the curriculum, along with training for teachers so that they can manage interactive and contextualised learning activities that are aligned with social values and diversity.

Acknowledgement

The authors would like to thank the supervisors who have provided input and advice in completing this research.

References

- Ainia, V. M., Mariana, N., & Indrawati, D. 2024. Geometry Learning Design Through Ethnomathematics of Gandrung Fashion and Accessories. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 8(5): 1109-1117.
- Ali, M., Nurhayati, R., Wantu, H. M., Amri, M., & Santosa, T. A. 2024. The Effectiveness of Jigsaw Model Based on Flipped Classroom to Improve Students' Critical Thinking Ability in Islamic Religious Education Learning. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 8(5): 1134-1145.
- Arisoy, B., & Aybek, B. (2021). The Effects of Subject-Based Critical Thinking Education in Mathematics on Students' Critical Thinking Skills and Virtues. *Eurasian Journal of Educational Research*, 21(92). <https://doi.org/10.14689/ejer.2021.92.6>
- Arochman, T., Margana, M., Ashadi, A., Achmad, S., Nugrahaeni, D. A., & Baihaqi, I. (n.d.). *The effect of project-based learning on English writing skill for EFL learners*.
- Azamatova, A., Bekeyeva, N., Zhaxylikova, K., Sarbassova, A., & Ilyassova, N. (n.d.). *The Effect of Using Artificial Intelligence and Digital Learning Tools based on Project-Based Learning Approach in Foreign Language Teaching on Students' Success and Motivation*.
- Bardhoshi, G., McDaniel, S. C., Um, B., & Kivlighan, D. M. (n.d.). *Validation of the Social Emotional Learning Skills Class Assessment (SELS-CA)*.
- Castelnovo, P., Clò, S., & Florio, M. (2023). A quasi-experimental design to assess the innovative impact of public procurement: An application to the Italian space industry. *Technovation*, 121, 102683. <https://doi.org/10.1016/j.technovation.2022.102683>
- Çayır, A., & Balcı, E. (n.d.). *The effect of differentiated instruction on gifted students' critical thinking skills and mathematics problem solving attitudes*.
- Erviana, V. Y., Sintawati, M., Bhattacharyya, E., Habil, H., & Fatmawati, L. (n.d.). *The effect of Project-Based Learning on Technological Pedagogical Content Knowledge among Elementary School Pre-Service Teacher*.
- Gråd, E., Erlandsson, A., & Tinghög, G. (n.d.). *Do nudges crowd out prosocial behavior?*
- Hanham, J., McCormick, J., & Hendry, A. (n.d.). *Project-based learning groups of friends and acquaintances: The role of efficacy beliefs*.
- Hariyadi, S., Rofi'i, A., Santosa, T. A., Taqiyuddin, & Sakti, B. P. (2023). Effectiveness of STEM-Based Mind Mapping Learning Model to Improve Students' Science Literacy in the Era of Revolution 4.0. *Jurnal Penelitian Pendidikan IPA*, 9(10), 791-799. <https://doi.org/10.29303/jppipa.v9i10.5125>
- Ijirana, I., Aminah, S., Supriadi, S., & Magfirah, M. (2022). Critical thinking skills of chemistry education students in team project-based STEM-metacognitive skills learning during the Covid19 pandemic. *Journal of Technology and Science Education*, 12(2), 397. <https://doi.org/10.3926/jotse.1697>
- Kadafi, A., Wiyono, B. B., & Ramli, M. (n.d.). *Improving Prosocial Behavior Through Virtual Media Based on Religious Values in Elementary School Students*.
- Khafah, F., Suprpto, P. K., & Nuryadin, E. (2023). The effect of project-based learning model on students' critical and creative thinking skills in the ecosystem concept. *Jurnal Pendidikan Biologi Indonesia*, 9(3).
- Kılıç, İ., & Ulu, M. Ö. (n.d.). *The effect of project-based learning approach on student achievement in life science course in primary education*.
- Laksana, S. D., Setyosari, P., Praherdhiono, H., Kuswandi, D., & Jannan, D. (n.d.). *The Effect of the Use of Digital Gamification and Metacognitive Skills on Students' Mathematics Solving Ability*.
- Lee, H., & Lee, R. (n.d.). *Transformation of Korean Higher Education in the Digital Era:*

Achievements and Challenges.

- Llorent, V. J., González-Gómez, A. L., Farrington, D., & Zych, I. (2022). Improving Literacy Competence and Social and Emotional Competencies in Primary Education Through Cooperative Project-Based Learning. *Psicothema*, 34, 102–109. <https://doi.org/10.7334/psicothema2020.372>
- Masdarini, L., Candiasa, I. M., Agustini, K., & Sudatha, I. G. W. (n.d.). *The Effect of Project-Based Learning and Self-Efficacy towards Students' Entrepreneurial Readiness in Vocational High School*.
- Mishra, M., Sahu, S. K., Mangaraj, P., & Beig, G. (2023). Assessment of hazardous radionuclide emission due to fly ash from fossil fuel combustion in industrial activities in India and its impact on public. *Journal of Environmental Management*, 328, 116908. <https://doi.org/10.1016/j.jenvman.2022.116908>
- Mursid, R., Saragih, A. H., & Hartono, R. (n.d.). *The Effect of the Blended Project-based Learning Model and Creative Thinking Ability on Engineering Students' Learning Outcomes*.
- Özkan, Z. C. (n.d.). *The Effect of Project-Based Learning in Visual Arts Lesson on Lesson Outcomes and Attitudes*.
- Pitorini, D. E., Suciati, & Harlita. (2024). Students' Critical Thinking Skills Using an E-Module Based on Problem-Based Learning Combined with Socratic Dialogue. *Journal of Learning for Development*, 11(1), 52–65. <https://doi.org/10.56059/jl4d.v11i1.1014>
- Popov, N., & Thielmann, I. (n.d.). *The core tendencies underlying prosocial behavior: Testing a person–situation framework*. <https://doi.org/10.1111/jopy.12957>
- Prasetyo, W. H., Sumardjoko, B., Muhibbin, A., Naidu, N. B. M., & Muthali'in, A. (2023). Promoting Digital Citizenship among Student-Teachers: The Role of Project-Based Learning in Improving Appropriate Online Behaviors. *Participatory Educational Research*.
- Rodrigues, M., Dinis, F. M., & Santos, H. (2023). *Between Students' Perceptions of School*.
- Sastradiharja, E. J. (n.d.-b). *Implementasi Pendidikan Lingkungan Hidup untuk Meningkatkan Kebiasaan Hidup Bersih dan Sehat pada Anak Usia Dini*. *Jurnal Pendidikan Anak Usia Dini*, 8(5): 1109-1117.
- Savran Gencer, A., & Doğan, H. (2020). The Assessment of the Fifth-Grade Students' Science Critical Thinking Skills through Design-Based STEM Education. *International Journal of Assessment Tools in Education*, 7(4), 690–714. <https://doi.org/10.21449/ijate.744640>
- Şimşek, G., Üldeş, A., Taş, Y., & Şimşek, Ö. (n.d.). *The Impact of Engineering Design-Based STEM Education on Students' Attitudes Toward STEM and Problem-Solving Skills*.
- Suwistika, R., Ibrohim, I., & Susanto, H. (2024). Improving critical thinking and creative thinking skills through POPBL learning in high school student. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, 10(1), 115–122. <https://doi.org/10.22219/jpbi.v10i1.30172>
- Sviatko, M. & Camed. (2024). *Learning by Doing: Why Project-Based Learning Proves to Be an Effective Method for Developing Self-regulation and Other Emotional Competencies in Gen Z Students*. <https://doi.org/10.13140/RG.2.2.27262.19520>
- Taylor, J. C., Allen, L. M., Van, J., & Moehr, M. (2024). The Effects of Project-Based Learning on Student Behavior and Teacher Burnout in an Emotional/Behavioral Support Classroom. *Journal of Emotional and Behavioral Disorders*, 32(2), 81–94. <https://doi.org/10.1177/10634266241235933>
- Treepob, H., Hemtasin, C., & Thongsuk, T. (2023). Development of Scientific Problem-Solving Skills in Grade 9 Students by Applying Problem-Based Learning. *International Education Studies*, 16(4), 29. <https://doi.org/10.5539/ies.v16n4p29>
- Trombini, C. (n.d.). *Receiving Social Support Motivates Long-Term Prosocial Behavior*.
- White, M. (n.d.). *Investigating the Responses of Children in First Grade Engaged in STEM Lessons*. 31(1).
- Widyaningtyas, F. S., Kuswanto, H., Aththibby, A. R., Muskania, R. T., Rosa, F. O., Damayanti, P., & Yanto, B. E. (n.d.). *Creative Physics Problem Solving based on Local Culture to Improve Creative Thinking and Problem-Solving Skills*.

- Yang, H., Zhang, Q., & Shen, M. (n.d.). *The Practice and Research of Junior High School Information Technology Project-Based Learning Based on STEM Education Concept*.
- Zainil, M., Kenedi, A. K., Rahmatina, Indrawati, T., & Handrianto, C. (2022). The Influence of a STEM-Based Digital Classroom Learning Model and High-Order Thinking Skills on the 21st-Century Skills of Elementary School Students in Indonesia. *Journal of Education and E-Learning Research*, 10(1), 29–35. <https://doi.org/10.20448/jeelr.v10i1.4336>
- Zulyusri, Z., Elfira, I., Lufri, L., & Santosa, T. A. (2023). Literature Study: Utilization of the PjBL Model in Science Education to Improve Creativity and Critical Thinking Skills. *Jurnal Penelitian Pendidikan IPA*, 9(1), 133–143. <https://doi.org/10.29303/jppipa.v9i1.2555>